

**REMARKS**

The present application has been amended to overcome the Examiner's rejections and to clarify the patentable features of the Applicants' invention. In particular, claims 1, 4, 15, 20 and 27 have been amended. The subject matter of claims 2 and 3 have been incorporated into claim 1 and these latter 2 claims have been canceled. The subject matter of claim 22 has been incorporated into claim 20. Reconsideration of the rejection of the claims in this application are hereby requested.

Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by the Sen-Yu patent. Dependent claims 2 and 3 were rejected as being obvious in view of the combination of the Sen-Yu patent and the Rogers et al.

Claim 1 has been amended to incorporate the non-obvious subject matter of claims 2 and 3 and should now be allowable over the prior art. The Sen-Yu patent discloses an infrared gas burner that includes a "guiding device 80". It does not disclose the claimed diffuser/reflector that has an inverted V-shaped configuration and a first plurality of openings that are arranged in sets of parallel rows that include guide plates and a second plurality of openings that are located in an upper region of the diffuser/reflector which do not include associated guide plates.

This claimed structure was originally set forth in dependent claims 2 and 3. Original claims 2 and 3 were rejected on the combination of Rogers and Sen-Yu as

being obvious. The Rogers et al. patent does not even remotely suggest a diffuser/reflector constructed in accordance with paragraph d) of claim 1. The Rogers et al. "distribution member 30" merely has holes without overhangs. Combining Rogers with Sen-Yu merely suggests using a single opening with guiding portions 83, arranged in a line. It certainly does not suggest, when combined with the Sen-Yu patent, to construct a diffuser/reflector with a first plurality of openings that includes overhanging guide plates and a second plurality of openings located in the upper region which do not include associated guide plates. Claim 1 should, therefore, be allowed. Claims 4, 11 and 13 depend from, and are allowable along with, claim 1.

Claim 5 was rejected as anticipated by the Johnson patent. Reconsideration of this rejected claim is hereby requested. The Johnson patent discloses an infrared burner that includes a radiant grid 14 used in combination with a tube burner. The radiant grid is mounted down stream of the combustion process. Combustion is completed before reaching this grid. In the construction set forth in claim 5, the combustion occurs at the claimed combustion surface. Claim 5 further specifies that the combustion surface is defined by an element that includes a plurality of integrally formed rigidizing ribs. The Johnson patent does not teach using integrally formed rigidizing ribs on a combustion surface. Accordingly, claim 5 should be allowed. Claims 8-10, 12 and 14 depend from, and are allowable along with, claim 5.

Claim 15 (and claim 27) were rejected under 35 U.S.C. §102(b) as being anticipated by the McCall patent. This patent discloses a conventional water heater burner and is not a premixed burner. Moreover, both claims 15 and 27 have been amended to clarify the inlet conduit claimed which serves to communicate a combustible gas and combustion air mixture to the burner body located below the combustion surface. In addition, the inlet conduit supplies substantially all combustion air needed for combustion of the combustible gas. The McCall patent does not disclose all of these elements. In McCall, air for combustion is obtained from the combustion chamber. The burner does not include an inlet conduit that carries both a combustible gas and combustion air. In the McCall patent, the conduit 22 simply delivers combustible gas. Moreover, the McCall patent does not disclose an inlet conduit having an upset ridge that abuts an inside surface surrounding opening in the door and an outwardly extending flare that abutably engages the outside surface of the door as recited in claim 5. Accordingly, claim 15, and its associated dependent claim should be allowed.

Claim 27, which is also rejected under 35 U.S.C. §102(b) as being anticipated by McCall, has also been amended to feature an inlet conduit that communicates a combustible gas and combustion air mixture to the burner body, with the inlet conduit supplying substantially all combustion air needed for combustion of the combustible gas. Claim 27 also claims that an inlet end of the inlet conduit is secured to the

bulkhead/access door in a region defining a mounting location having a predetermined profile that is unrelated to the radius of the access opening. As argued in connection with claim 15, the McCall patent does not teach or suggest an inlet conduit that delivers a combustible gas and combustion air mixture to the burner. In addition, it does not even remotely suggest an inlet conduit that is secured to a mounting location that has a predetermined profile that is unrelated to the radius of the access opening. This feature allows an access door for various water heaters to accept the same inlet end of the conduit, because the region on the access door where the inlet conduit is attached, has the same profile regardless of what the overall radius of the access door is. Accordingly, claim 27, and its associated dependent claims, should be allowed.

Claim 20, which was also rejected as being anticipated by the Sen-Yu patent, has been amended to incorporate the subject matter of dependent claim 22. As amended, claim 20 now features a diffuser/reflector which, among other features, includes a structure that includes a first plurality of openings, each of which includes a transversely extending overhanging element. These elements serve to reflect heat away from the lower housing and to encourage gas/air mixing, as the gas/air mixture travels from the lower housing to the combustion surface. In addition, claim 20 now includes the subject matter of claim 22 and calls for another plurality of openings that are located in another region of the structure. These latter openings form part of an

unobstructed flow path for the gas/air mixture to the combustion chamber. A diffuser/reflector with two different sets of openings, one set of which includes associated overhang elements and the other set of which are unobstructed, is not even remotely suggested by the Sen-Yu patent. Dependent claim 22 appears to have been rejected (see paragraph 10 of the Office Action), as being obvious in view of the combination of the Sen-Yu and Rogers et al. patents. As articulated in connection with amended claim 1, the Rogers et al. patent does not disclose or suggest a diffuser/reflector that includes two sets of openings, one of which include an overhang, and the other of which provide an unobstructed flow path for the gas fuel mixture. Accordingly, claim 20, and its associated dependent claims, should be allowed.

In view of the foregoing amendment and discussion, it is respectfully submitted that the claims in the application are now patentably distinct from the prior art, each from the other, and this application is in condition for allowance. Prompt notice to that effect is respectfully requested.

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Please charge any deficiency or credit any overpayment in the fees for this  
amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

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